

Biocide	Plastics	<i>Listeria</i> <i>Monocytogenes</i>	<i>Escherichia</i> <i>Coli</i>	<i>Staphylococcus</i> <i>Aureus</i>	<i>Staphylococcus</i> <i>aureus</i> (Res)	<i>Bacillus</i> <i>Subtilis</i>	<i>Streptococcus</i> <i>Faecalis</i>	<i>Salmonella</i> <i>Typhimurium</i>
0	Clear EP	0	0	19	17	0	0	0
Triclosan	Clear EP	16	17	25	23	17	16	17
0	Pigmented EP	0	0	0	0	0	0	0
Triclosan	Pigmented EP	17	23	39	39	21	16	23
0	Pigmented EP	0	0	0	0	0	0	0
Triclosan	Pigmented EP	0	19	25	25	25	0	15
Triclosan	Pigmented EP	0	19	29	29	29	0	17
0	Clear polyester	0	0	0	0	0	0	0
Triclosan	Clear polyester	19	17	25	15	19	16	19

Triclosan = 2,4,4'-trichloro-2'-hydroxydiphenylether

1. A substantially dry powder coating composition comprising particles each of which is a thermosetting polymer powder and contains an organic biocide, in a concentration of from 0.1 to 20% by weight, the composition being in the form of particulates each comprising the polymer powder containing the biocide, whereby the biocide is substantially uniformly distributed throughout the composition.

2. A powder coating composition according to claim 1, wherein the biocide is present in an amount of from 2 to 6% by weight.

3. A powder coating composition according to claim 1, wherein the biocide is a trichlorohydroxydiphenylether.

4. A powder coating composition according to claim 3, wherein the biocide is 2,4,4'-trichloro-2'-hydroxy diphenylether.

5. A powder coating composition according to claim 1, wherein the biocide is a methylurea.

6. A powder coating composition to claim 5, wherein the biocide is 3-(3,4-dichlorophenyl)-1,1-dimethylurea.

7. A powder coating composition according to claim 1, wherein the biocide is an imidazolcarbamate.

8. A powder coating composition according to claim 1, wherein the polymer powder has a specific gravity of from 1.2 to 1.9 and a particle size less than 100 microns.

9. A powder coating composition according to claim 1, wherein the polymer particles comprise a polyester or epoxypolyester or polyurethane or acrylic or other thermosetting powder.

10. A method of distributing an organic biocide substantially uniformly in a thermosetting powder coating composition, the method comprising:

20 mixing precursors of the thermosetting polymer powder together with the organic biocide in a concentration of 0.1 to 20% by weight and heating the mixture to form a hot mixture;

25 extruding the hot mixture into sheet form;
grinding the granules to a powder having the size of
particles appropriate to powder coating; and
sieving the powder to less than 100 microns whereby the
powder may be sprayed electrostatically.

11. A method of forming a coating on a metal substrate wherein said coating exhibits anti-microbial activity, the method comprising:

mixing precursors of a thermosetting polymer powder together with particles of an organic biocide to form a mixture and then heating the mixture;

35 extruding the hot mixture into sheet form;
granulating the sheet to form granules;
grinding the granules to form a powder;
sieving the powder to the size of particles appropriate to
electrostatic spraying;

40 electrostatically spraying the sieved powder on to the metal substrate to form said coating and; curing the coating to provide said anti-microbial coating on the metal substrate.